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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,531	12/12/2003	Barrett E. Cole	H0006044-0760(1100.123210	2695

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EXAMINER

HODGES, MATTHEW P

ART UNIT PAPER NUMBER

2879

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/735,531

Applicant(s)

COLE ET AL.

Examiner

Matt P. Hodges

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 13-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 20-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/7/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of Group I in the reply filed on 3/14/2006 is acknowledged.

### ***Specification***

The disclosure is objected to because of the following informalities:

Page 6 line 17, the mesh size width is labeled with the number 31. It appears that it was intended to be labeled with the number 32.

Page 7 line 2, the word "ensuring" appears to be a typographical error. It is believe that the applicant intended to write "ensuing".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 1-5, 7, 8, 20-27, 31, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Yang et al. (IDS reference filed 5/21/2004).

Regarding claims 1 and 23, Yang discloses (see figures on page 2) a UV detector including a first wafer having a cathode, second wafer with a chamber, and a third wafer having an anode.

Regarding claim 2, Yang further discloses that the chamber is sealed. (Page 4 line 19).

Regarding claim 3, Yang further discloses the use of a transparent third wafer. (Page 2 line 6).

Regarding claims 4 and 5, Yang further discloses the use of an H<sub>2</sub>+Neon gas inside the chamber. (Page 2 line 10).

Regarding claims 7 and 8, Yang further discloses that the chamber is sealed with a eutectic bond. (Page 4 line 19).

Regarding claims 20-22, claims 20-22 are rejected for the reasons cited in the rejection of claims 1 and 4 above.

Regarding claim 24, Yang further discloses a cathode located in a first opening of the second wafer and an anode grid located in a second opening of the second wafer. (See figures on page 2).

Regarding claim 25, claim 25 is rejected for the reasons listed in the rejection of claim 3 above.

Regarding claim 26, claim 26 is rejected for the reasons listed in the rejection of claim 4 above.

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Regarding claim 27, the use of electrical connections to the cathode and anode are inherent in the operation of the device.

Regarding claim 31, Yang further discloses the use of multiple chambers and detectors on a single wafer.

Regarding claim 32, the cutting of a wafer to select individual detectors is inherent to the process of manufacture of a detector device using large wafers.

Claims 1-4, 20-27, 31, and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Eden et al. (US 2004/0100194 A1).

Regarding claims 1 and 23, Eden discloses (see figure 2a) a UV detector including a first wafer having a cathode, second wafer with a chamber, and a third wafer having an anode.

Regarding claim 2, Eden further discloses that the chamber is sealed. (Paragraph 0045).

Regarding claim 3, Eden further discloses the use of a transparent third wafer. (Paragraph 0057).

Regarding claim 4, Eden further discloses the use of a Neon gas inside the chamber. (Paragraph 0045).

Regarding claims 20-22, claims 20-22 are rejected for the reasons cited in the rejection of claims 1 and 4 above.

Regarding claim 24, Eden further discloses a cathode located in a first opening of the second wafer and an anode grid located in a second opening of the second wafer. (See figure 4b).

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Regarding claim 25, Eden 25 is rejected for the reasons listed in the rejection of claim 3 above.

Regarding claim 26, Eden 26 is rejected for the reasons listed in the rejection of claim 4 above.

Regarding claim 27, the use of electrical connections to the cathode and anode are inherent in the operation of the device.

Regarding claim 31, Eden further discloses the use of multiple chambers and detectors on a single wafer. (Paragraph 0063).

Regarding claim 32, the cutting of a wafer to select individual detectors is inherent to the process of manufacture of a detector device using large wafers.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eden et al. (US 2004/0100194 A1).

Regarding claim 5, Eden discloses the claimed invention but does not appear to specify the use of a gas mixture including both H<sub>2</sub> and Neon. Eden does disclose the selection of a gas mixture being dependent upon the desired sensitivity. (Paragraph 0051) Further, Hydrogen advantageously controls capacitance of the discharge cell and improves amplification. It has

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been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have included Hydrogen into the Neon gas mixture as taught by Eden, since the selection of known materials for a known purpose is within the skill of the art.

Regarding claim 6, Eden further discloses the use of a chamber 60 microns thick. (Paragraph 0009).

Claims 9-12 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (IDS reference filed 5/21/2004) in view of Eden et al. (US 2004/0100194 A1).

Regarding claim 9, Yang discloses the claimed invention including the use of silica (and silica based glasses) for the first and second wafers, but does not appear to specify the use silica for the third wafer. However Eden, in the same field of endeavor, discloses the use of silicon for the third wafer. (Paragraph 0065) Further, Eden discloses the use of silicon wafers being advantageous for the device in order to provide for easier and cheaper manufacture. (Paragraph 0043) Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have included the use silica for the third wafer as taught by Eden into the device as disclosed by Yang in order to advantageously provide for easier and cheaper manufacture.

Regarding claim 10, claim 10 is rejected for the same reasons as cited in the rejection of claim 27 above.

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Regarding claims 11 and 12, Yang further discloses a metal and a metal anode grid. (See figures on page 2).

Regarding claim 28, claim 28 is rejected for the same reason as cited in the rejection of claim 9 above.

Regarding claim 29, claim 29 is rejected for the same reasons as cited in the rejection of claim 5 above.

Regarding claim 30, Yang in view of Eden discloses the claimed invention but does not appear to specify the use of a gas mixture including both H<sub>2</sub> and Neon where H<sub>2</sub> is in a portion greater than 50%. However, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. Further, too much Neon would increase the capacitance of the structure, while too little Neon would reduce the sensitivity of the discharge cell. A suitable range would be identified through routine experimentation in the art. Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide H<sub>2</sub> in a portion greater than 50%, since optimization of workable ranges is considered within the skill of the art.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Muller et al. (US 5,489,817) discloses the use of a photodiode.

Iwanczyk et al. (US 6,541,836) discloses the use of a semiconductive photodiode.



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***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt P Hodges whose telephone number is (571) 272-2454. The examiner can normally be reached on 7:30 AM to 4:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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